CLAIMS:

We claim:

1. A method for transacting between an initiator device and a plurality of target devices, the method comprising the steps of:

configuring the plurality of target devices to associate a portion of memory with a particular target device of the plurality of target devices;

sending a multicast transaction from the initiator device to the plurality of target devices;

executing the transaction when the transaction is received by the plurality of target devices according to the configuration of the target device.

2. The method of claim 1, the configuring step further comprising:

assigning a base memory address to be shared by the plurality of target devices; and

assigning a first portion of memory to a first target device of the plurality of target devices.

3. The method of claim 2, wherein the transaction is a read request for a block of stored data from memory, the executing step further comprising:

reading the base memory address from the read request;

initiating a read operation by the plurality of target devices assigned to the base memory address;

fetching stored data from a portion of memory associated with each of the target devices, the data being concurrently fetched by each associated target device; and

sending the fetched data to the initiator device.

4. The method of claim 2, wherein the transaction is a write request for data to be stored in memory, the executing step further comprising:

reading the base memory address from the write request;

initiating a write operation by the plurality of target devices assigned to the base memory address; and

writing data of the write request to a portion of memory associated with each target device, the data being concurrently written by each associated target device.

5. The method of claim 1, wherein the target devices comprise input/output controllers.

6. The method of claim 1, wherein the target devices comprise disk array controllers.

7. The method of claim 1, wherein the plurality of target devices comprise a target group, the target group addressable with a single base memory address.

8. The method of claim 1, further comprising:
a plurality of target groups.

9. A method for transacting data stored in memory between an initiator device and multiple target devices, the method comprising the steps of:
detecting a multicast transaction request;
accessing a first portion of memory by a first target device associated with the first portion of memory in response to the multicast transaction request; and
accessing a second portion of memory by a second target device associated with the second portion of memory concurrently with access to the first portion of memory in response to the multicast transaction request.

10. The method of claim 9, wherein the target devices comprise input/output controllers.

11. The method of claim 9, wherein the target devices comprise disk array controllers.

12. The method of claim 9, wherein the first target device and the second target device are configured as part of a target group, the target group addressable with a single base memory address.

13. The method of claim 12, wherein a plurality of target devices are configured into multiple target groups.

14. The method of claim 9, wherein the multicast transaction is a multicast read request.

15. The method of claim 9, wherein the multicast transaction is a multicast write request.

16. A computer system for communicating between an initiator device and multiple target devices comprising:

a communications bus;

an initiator device coupled to the communications bus for initiating a transaction request; and

a plurality of target devices coupled to the communications for executing the transaction request, the plurality of target devices executing the transaction request by each target device concurrently responding to a portion of the transaction request.

17. The computer system of claim 16, wherein the target devices comprise input/output controllers.

18. The computer system of claim 16, wherein the target devices comprise disk array controllers.

19. The computer system of claim 16, wherein the plurality of target devices are accessed with a single base memory address.

20. The computer system of claim 16, wherein the plurality of target devices comprise a target group.

21. The computer system of claim 20, further comprising:

a plurality of target groups.

22. The method of claim 16, wherein the transaction is a multicast read request.

23. The method of claim 16, wherein the transaction is a multicast write request.

24. The computer system of claim 16, wherein the communications bus comprises a Peripheral Component Interconnect (PCI) bus.

25. A computer system for multicast input/output transactions, comprising:

a processor;

a communications bus coupled to the processor;

an initiator device coupled to the communications bus for issuing a multicast transaction; and

a plurality of target devices coupled to the communications bus for executing the multicast transaction with concurrent interleaved data responses.

26. The computer system of claim 25, wherein the target devices comprise input/output controllers.

27. The computer system of claim 25, wherein the target devices comprise disk array controllers.

28. The computer system of claim 25, wherein the plurality of target devices comprise a target group, the target group addressable with a single base memory address.

29. The computer system of claim 28, further comprising:

a plurality of target groups.

30. The method of claim 25, wherein the multicast transaction is a multicast read request.

31. The method of claim 25, wherein the multicast transaction is a multicast write request.